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E85 Life Cycle Impulse (LCI)

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Initial Print Date: 03/06 Revision Date:

E85 Life Cycle Impulse

Model: Z4

Production: from March 2006

OBJECTIVES

After completion of this module you will be able to:

- Understand the changes made to the E85 starting March production

Introduction

The E85 LCI (Life Cycle Impulse) represents a redesigned E85 (Z4). This vehicle will be introduced to the market in March 2006.

2 model variants will be available:

- Z4 3.0i with the N52B30 UL engine, 215 bhp
- Z4 3.0si with the N52B30 OL engine, 255 bhp

On the outside, the redesigning measures are noticeable by the modified front and rear as well as the new light assemblies.

On the inside, new upholstery colors (Montego blue, black and saddle brown) as well as the higher-grade decorative trim (brushed aluminium, aluminium cirrus and dark poplar grain) keep in line with the new design.

A higher-grade interior finish such as the rollbar and air conditioning controls are also new.

Technical Data

General	Z4 Roadster 3.0i	Z4 Roadster 3.0si
Curb weight, lb.:		
Manual transmission	3020	3086
Automatic transmission	3086	3131
Weight distribution, front/rear, %:		
Manual transmission	49.9/50.1	49.9/50.1
Automatic transmission	50.6/49.4	50.6/49.4
Wheelbase, in.	98.2 [1]	
Track, front/rear, in.	58.0/60.0 [1]	
Length, in.	161.1 [1]	
Width, in.	70.1 [1]	
Height, in. (with softtop up)	50.1 [1]	

Body	Z4 Roadster 3.0i	Z4 Roadster 3.0si
Type	2-seat Roadster [1]	
Aerodynamic drag coe□cient	0.36 [1] (with softtop up)	
EPA size classification	2-Seater [1]	

Accommodations	Z4 Roadster 3.0i	Z4 Roadster 3.0si
Seating capacity, persons	2 [1]	
Shoulder room, in.	52.5 [1]	
Head room, in.	37.3 (with softtop raised)	
Leg room, in.	42.0 [1]	
EPA interior volume, cu ft.	47.6 [1] (with softtop raised)	
EPA cargo volume, cu ft.	8.5/9.2 [1,2]	

Engine & electrical	Z4 Roadster 3.0i	Z4 Roadster 3.0si
Engine type	DOHC inline 24-valve 6-cylinder, magnesium/aluminum composite construction, Valvetronic variable intake-valve lift & Double VANOS [3] steplessly variable intake-& exhaust-valve timing [1]	
Bore x stroke, mm/in.	85.0 x 88.0/3.35 x 3.46 [1]	
Displacement, cc/cu in.	2996/183 [1]	
Compression ratio	10.7:1	
Power @ rpm, hp	215 @ 6250	255 @ 6600
Torque @ rpm, lb-ft.	185 @ 2750	220 @ 2750
Engine-management system	MSV70 with knock control (2 sensors); Valvetronic , variable valve timing, electronic throttle system, engine cooling & other functions included in control strategy [1]	
Induction system	Single-stage	3-stage
Fuel requirement	Premium unleaded [1]	
Fuel capacity, U.S. gal.	14.5 [1]	
Battery capacity, amp-hr.	55 [1]	
Alternator output, amp./W	120/1680 [1]	

Drivetrain	Z4 Roadster 3.0i	Z4 Roadster 3.0si
Drive system	Front engine/rear drive [1]	
Manual transmission	Getrag I, 6-speed	Getrag H, 6-speed
Ratios: 1st	4.32:1	4.35:1
2nd	2.46:1	2.50:1
3rd	1.66:1	1.66:1
4th	1.23:1	1.24:1
5th	1.00:1	1.00:1
6th	0.85:1	0.85:1
Reverse	3.94:1	3.93:1

Drivetrain (cont.)	Z4 Roadster 3.0i	Z4 Roadster 3.0si
Final drive ratio	3.38:1	3.23:1
Automatic transmission	ZF 6 HP 19, 6-speed [1]	
Ratios: 1st	4.17:1 [1]	
2nd	2.34:1 [1]	
3rd	1.52:1 [1]	
4th	1.14:1 [1]	
5th	0.87:1 [1]	
6th	0.69:1	
Reverse	3.40:1 [1]	
Final drive ratio	3.73:1	3.64:1

Chassis	Z4 Roadster 3.0i	Z4 Roadster 3.0si
Body/frame construction	Unitized steel structure with aluminum hood [1]	
Front suspension	Struts, arc-shaped forged-aluminum lower arms with hydraulic cushions, coil springs, twin-tube gas-pressure shock absorbers, anti-roll bar; aluminum thrust plate & strut-dome braces [1]	
Rear suspension	Multi-link system with Central Links, upper & lower lateral links (upper link of cast aluminum), coil springs, twin-tube gas-pressure shock absorbers, anti-roll, steel thrust plate & V-brace [1]	
Steering type	Rack & pinion, vehicle-speed-sensitive electric power assist [1]	
Overall ratio	14.2:1 [1]	
Turns, lock-to-lock	3.0 [1]	
Turning circle, ft.	32.2 [1]	
4-wheel disc brakes, vacuum-assisted: Diameter, front, mm/in.	300/11.8 (ventilated)	325/12.8 (ventilated)
Diameter, rear, mm/in.	294/11.6 (ventilated)	294/11.6 (ventilated)
Wheels (standard)	Cast alloy [1]: 17 x 8.0	17 x 8.0
Wheels (optional)	Cast alloy [1]: 17 x 8.0 front/17 x 8.5 rear (ZSP)	18 x 8.0 front/18 x 8.5 rear (ZSP)
Run-flat tires (standard)	225/45R-17 W-rated [4]	225/45R-17 W-rated [4]
Run-flat tires (optional)	225/45R-17 front/ 245/40R-17 rear [4] W-rated (ZSP)	225/40R-18 front/ 255/35R-18 rear [4] W-rated (ZSP)
Stability-enhancement system	Dynamic Stability Control (DSC), including all-speed traction control, Dynamic Traction Control, electronic brake proportioning, antilock braking (ABS), cornering/braking stability enhancement, Dynamic Brake Control, Brake Fade Compensation, Brake Standby, Brake Drying & Start-up Assistant	

Performance data		
Acceleration, 0-60 mph, sec. [5]:		
Manual transmission	6.2	5.6
Automatic transmission	6.6	5.7
Top speed, mph [6]		
Manual transmission	149	155
Automatic transmission	149	155
Fuel economy, EPA est. MPG, city/highway:		
Manual transmission	20/30	20/30
Automatic transmission	21/29	21/29

1 - Specification applies to both models.

2 - Softtop lowered/raised.

3 - VANOS = VAriable NOckenwellen Steuerung = variable camshaft control, or variable valve timing.

4 - Due to low-profile tires, please note: Wheels, tires and suspension parts are more susceptible to road hazard and consequential damages. Z4 models are not equipped with a spare tire and wheel. Performance tires are not recommended for driving in snow and ice conditions.

5 - BMW AG test results. Actual acceleration results may vary depending on specification of vehicle; road and environmental conditions; testing procedures and driving style. These results should be used for comparison only, and verification should not be attempted on public roads. BMW urges you to obey all posted speed limits and to please wear your safety belt at all times.

6 - Electronically limited.

ZSP – Sport Package

Body

The outer skin panel components of the body have been redesigned. As a result, the vehicle features a new front apron with black moulding and more accentuated edges.

The mounting arrangement of the front bumper cover, however, remains the same. Likewise, the kidney grills have also been modified but with the same mounting arrangement.

Close-up of Front

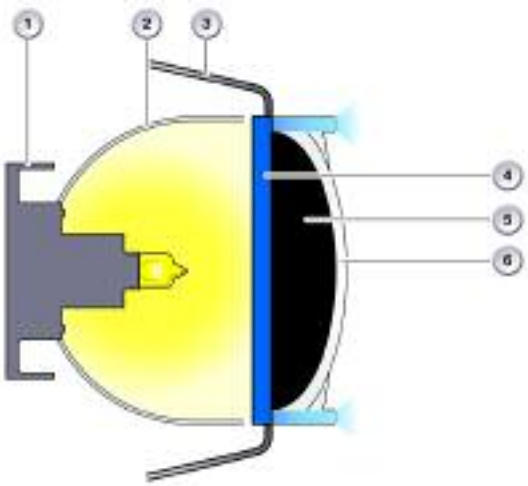
The horizontally integrated fog lights are a new development for the LCI.

The front headlights are completely new and integrate corona rings and white direction indicator lamps.

Geometrically, the halogen headlight remains unchanged. However, on the inner of the front direction indicator lamps is dimmed as the marker light in the same way as the outer direction indicator lamp was previously used.

The xenon headlamp has been modified. The halogen high beam light has been eliminated. The flash to pass feature as well as high beam illumination is the responsibility of the bi-xenon lamp/shutter.

The headlight features a corona ring. There is a blue filter between the light source and the corona ring. This filter only allows blue light to pass through, thus giving the corona ring a similar color to the bi-xenon headlight.



Index	Explanation
1	Light Source for Corona Ring
2	Reflector
3	Headlight Housing
4	Light Filter for Corona Ring(Blue Tint)
5	Cover
6	Lens

NOTES

The rear bumper cover now has a second integrated lip (design).

The tail light cluster has been modified and features a new design. There is only one rear fog light.

The complete tail light cluster must be removed in order to replace a defective bulb in the rear fog light.

The area illuminated by the brake lights increases as the braking force increases (brake force display).

Index	Explanation
1	Rear fog light/brake force display
2	Reversing light
3	Reflector
4	Brake force display/tail light LED
5	Brake light
6	Direction indicator light

The modifications in this area are further enhanced by additional features such as larger diameter exhaust tail pipes (chrome-plated on the Z4 3.0si) and new rim design.

Drivetrain

The E85 LCI will be available with the two new generation six cylinder engines already in production and use on our vehicles. The two vehicle variants are known as:

- Z4 3.0i 215 bhp (N52B30 UL))
- Z4 3.0si 255 bhp (N52B30 OL)

With the noticeable power boost provided by all 6-cylinder engines, the performance values of the E85 LCI are distinctly above those of the competition while fuel consumption figures remain lower.

All E85 LCI are equipped with a 6-speed gearbox. The 3.0si and the 2.5si are optionally available with an automatic gearbox and gearshift paddles on the steering wheel.

Engine Management

The N52 engine features the familiar engine management MSV70. The N46 engine is equipped with the engine management ME9.

N52 Engine

Chassis

As its predecessor, the E85 LCI has a sporty tuned chassis. The standard run-flat tires have been specially developed for the sports characteristics of the vehicle. They are now a little more comfortable without changing the vehicle's agility.

Otherwise, the well-proven chassis of the Z4 has been retained. This lightweight chassis with single-joint spring strut front axle and central link rear axle with aluminium control arms still ensures safe and reliable handling as well as high cornering speeds.

DSC and DTC as well as the 50:50 axle weight distribution are further characteristic features of the E85 LCI chassis.

Electrical System

Bus Systems

New or updated control units in the bus system include:

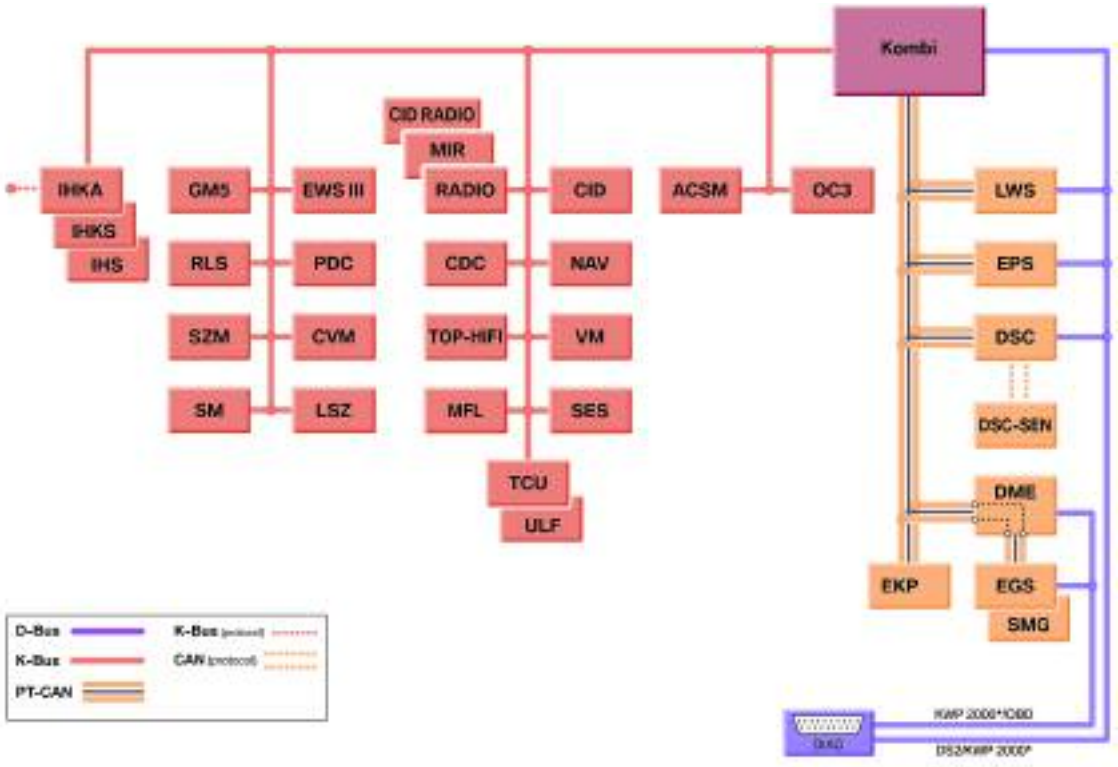
- ACSM (Advanced crash and safety management)
- MFL (Multifunction steering wheel)
- SES (Voice recognition system)
- DSP-Carver = Top-HiFi
- ULF (Universal charging and hands-free facility)
- Controlled fuel pump (only in connection with N52 engine)

Passive Safety System

The E85 LCI is equipped with the advanced crash and safety management system (ACSM). The ACSM system is fully described in the training material ST403 Passive Safety Systems course.

Information & Communication Systems

The cable between the CD changer and amplifier has been eliminated if the option for



E85 Bus overview as from 01/2006